claim, and the result not unanimously accepted, as long as the boundaries of a claim may be understood it is 'sufficiently clear to avoid invalidity [for] indefiniteness.'" *Invitrogen Corp.* v. *Biocrest Manufacturing L.P.*, 424 F.3d 1374, 1383 (Fed. Cir. 2005), citing *Exxon* at 1375. A claim will not be held invalid if the "meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree." *Bancorp Servs., L.L.C. v. Hartford Life Ins. Co., 359* F.3d 1367, 1371 (Fed. Cir. 2004). Absolute clarity is not required. *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1347 (Fed. Cir. 2005). Only claims "insolubly ambiguous" are indefinite. *Id.* The Federal Circuit has also made plain that the parameters of a claim need not be specified with mathematical precision. "A patentee need not define his invention with mathematical precision in order to comply with the definiteness requirement." *Oakley, Inc. v. Sunglass Hut Int'l,* 316 F.3d 1331, 1341 (Fed. Cir. 2003).

Second, a person of ordinary skill in the art of data packet communications would understand the meaning of these two terms. The term "complete" simply means that all of the information that a packet was or is intended to be transmitted with is present. The term "size" means the number or amount of bits, bytes, octets, or other relevant unit of measure included in a segment.

Third, the specification uses these terms repeatedly in the context of non-limiting example embodiments from which a person of ordinary skill would understand their meaning. For example, see page 12, lines 2-6 describing a complete IP packet, and page 9, lines 24-32 describing packet/segment size in terms of bytes and octets. But again, other units of packet/segment size measurement may be used.

Accordingly, Applicants respectfully submit that the objected to terms are not insolubly ambiguous and are definite within the meaning of the patent statute. Withdrawal of this rejection is requested.

Claims 1-29 now stand rejected under 35 USC §103 as being unpatentable over in view of three (3) newly-cited references: Yoshida et al. in view of Muller et al. and further in view of Jason. The rejection is respectfully traversed.

Yoshida et al. relates to a CDMA communication system having a plurality of base stations connected to a network via a packet transfer node (Abstract). Yoshida et al. addresses a problem of buffer overflow in base station buffers when the speed difference in the interworking between an IP network and the radio network is large ([0007]). Instead of having the data buffer at the base station, a separate packet transfer node houses the data buffer (120-122) ([0008]). A base station then determines the transmission rate of packets for a mobile station from the packet transfer node (PCF 206) and informs the packet transfer node of this rate ([0012]). Because the data buffer is located in a packet control function node 206 separate from the base stations (Fig. 1), it is not "in a base station system of a mobile communication system," as recited in claim 1. However, Yoshida et al. also discloses that each base station actually has a comparatively smaller data buffer (112-114 in Fig. 1, [0063]).

But Yoshida et al. fails to disclose segmenting data packets into data packet segments. Yoshida et al. discloses only complete, non-segmented data packets in the form of GRE encapsulated packets (Fig. 3, [0056]). In fact, the primary Yoshida reference fails to teach <u>any</u> feature in the body of any independent claim.

The Examiner understandably must turn to other references starting with Muller et al. In contrast to Yoshida et al., which relates to a CDMA mobile radio communication system with a

radio base station conducting wireless radio-based communication with mobile stations, Muller et al. is directed towards computer systems and computer networks. Such a computer network is not a mobile radio communication system and is based on wired connections between the computers. Wireless radio-based communication is not used. The wireless communication protocols employed in Muller et al. are therefore different from the wired protocols used in Yoshida et al. Accordingly, these two documents are not in the same field of endeavour.

Muller et al. discloses that when data to be transmitted in the computer network is longer than a certain minimum length, the data is divided into multiple portions, where each portion is carried by a separate packet (column 2, lines 9-14). This minimum length corresponds to a maximum transfer unit (MTU) and is defined by the computer network (column 2, lines 14-17). A packet memory includes a queue where packets are stored to await transfer to the host computer by a network interface circuit (column 4, lines 24-25; column 8, lines 35-40). The network interface circuit can retrieve header information from the packets in order to identify related packets to determine whether the packet data can be re-assembled with related data (column 9, lines 22-28; column 10, lines 8-15; column 11, lines 30-35; column 14, lines 33-38; column 16, lines 17-19; column 21, lines 15-17). Muller et al. also mentions a technique to determine if a packet is the final portion of data for a datagram flow that involves comparing the size of the data portion in each packet with the MTU threshold (column 41, lines 52-64; column 42, lines 5-11). Each packet except the last has a size equal to the MTU threshold to allow identification of the last packet (column 41, lines 60-64).

So Muller et al. discloses a method of managing a data buffer storing consecutive data packet segments in a network interface circuit of a computer system. The network interface circuit compares a size of a data packet segment with a MTU threshold and identifies a complete

data packet in the buffer based on these comparisons. But contrary to the contention in the office action, Muller et al. does not disclose that a size of a data packet segment is compared with a size of a next consecutive data packet segment in the buffer. Rather, Muller et al. consistently states that the size of each data packet segment is compared to the same MTU threshold (column 41, lines 60-64; column 42, lines 5-11). Accordingly, there is therefore no teaching in Muller et al. that the respective sizes of consecutive data packet segments in the buffer are compared to each other.

The office action also contends that Muller et al. does not disclose discarding of packets from the buffer. This is not correct because Muller et al. discards packets from the buffer when the network interface circuit is saturated or nearly saturated, i.e., in an overflow situation (column 9, lines 5-8; column 105, lines 21-24; column 105, lines 30-36). Muller et al. discloses that packets should be randomly discarded from the buffer (column 105, lines 25-27; column 106, lines 8-20), and the randomness is achieved by using a probability indicator (column 107, line 31 to column 108, line 55).

The office action combines Yoshida et al. with Muller et al. and Jason. Like Muller, Jason is directed towards a wired computer network, which is different from a mobile radio communication system, and therefore is not in the same field of endeavour as Yoshida.

Jason, in line with Muller et al., discloses that a packet is fragmented into smaller pieces if its size is larger than the MTU threshold ([0002], [0004]). Jason also discloses that fragments of a complete data packet are retained at the receiving point until all fragments have been received or until a timer expires. This timer expires if not all fragments of a complete data packet (i.e., a datagram) are received within a specified time interval. In that case, the received fragments are discarded.

So in contrast to what the office action states, Jason does not disclose discarding an identified complete data packet from the buffer. Rather, Jason teaches that fragments received at the receiving point are discarded when the reassembly timer expires, and the packet is still incomplete. The discarded fragments only encompass a subset of all fragments of a data packet (datagram), i.e., an incomplete data packet. Therefore, Jason fails to teach a base station buffer discarding an "identified complete data packet," as recited in claim 1.

A person of ordinary skill in the mobile radio communications art would not have combined the wired, computer network teachings of Muller et al. and/or Jason with the CDMA-based radio communications system in Yoshida et al. The communication between devices in Yoshida is based on wireless radio-based communication protocols while the communications between the interconnected computers is in Muller and Jason based on different wired communication protocols.

Moreover, there is no need to combine Muller et al. and Jason. Muller et al. already provides a detailed description of how to handle an overflow situation by discarding packets. Muller et al. discloses that randomly dropping packets distributes the impact of dropped packets among multiple connections or flows. If a small number of transmitting entities send a majority of the traffic received at the network interface circuit, then dropping packets randomly ensures that these offending entities are penalized proportionately (column 106, lines 20-26).

Jason, on the other hand, teaches that fragments of a received datagram are discarded when the reassembly timer for the datagram expires. But this is inefficient in the case of overflow because of the delay time waiting for the expiry of the timer before discarding any packets. At that point in time, further packets may have been received at the buffer, actually worsening the overflow situation.

The person skilled in the art would consequently not combine the fragment discarding technique of Jason with the disclosure of Muller et al. because i) the above mentioned problems with Jason and ii) Muller et al. itself already discloses a way of discarding packets in the case of buffer overflow.

Thus, for multiple reasons, the proposed combination is legally improper, and therefore, the rejection should be withdrawn on this basis alone.

Furthermore, even if one, for the sake of argument, could combine Yoshida et al, Muller et al. and Jason as proposed in the office action, the combination still fails to teach all of the features recited in each of the independent claims.

The combination fails to teach comparing the size of a data packet segment with the size of a next consecutive data packet segment in the buffer. Yoshida et al. does not disclose any size comparisons at all. Muller et al. and Jason both disclose that the respective sizes of data packet segments are compared to one and the same fixed MTU threshold. Hence, the combination discloses comparing a size of a data packet segment with a fixed MTU threshold and not with the size of a next consecutive data packet segment in the buffer.

Nor does the combination teach discarding an "identified complete data packet" from the buffer. Yoshida et al. is silent regarding discarding any identified complete data packet. Muller et al. randomly discards data packets from the buffer. Jason discards data packet segments up until a timer expires, but that only occurs when a complete data packet segment has not yet been received and therefore cannot be discarded.

Thus, even trying to combine these three documents, which a person of ordinary skill would not have done for the reasons explained above, multiple elements of the independent claims are missing.

The claimed technology has significant advantages over the combination of these three documents. Although using a fixed MTU threshold as in Muller et al and in Jason might be acceptable in computer networks with wired communication protocols, such an approach would not be beneficial to situations in radio-based mobile communications systems. For example, in contrast to Muller et al. and Jason, in any specific transfer of data packet segments there is a maximum size. This maximum size is typically negotiated between the user equipment and the communication network and can differ from one user equipment to another and also differ during different communication sessions. So it generally is not possible to use a single MTU threshold as in Muller et al. and Jason in mobile communications systems. The claimed technology therefore enables identification of a complete data packet where it is not possible to use a fixed, single segment threshold. None of the three applied documents or any combination thereof recognize or solve that problem.

The application is in condition for allowance. An early notice to that effect is earnestly solicited.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: _____
John R. Lastova
Reg. No. 33,149

JRL:maa
901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: (703) 816-4000
Facsimile: (703) 816-4100